

Applicant: Fehlborg et al.
Application No.: 10/689,574
Response to Office action dated Aug. 1, 2006
Response filed November 1, 2006

Remarks

Claims 1–5, and 7–11, and 13–14 remain pending in the application. In the Office action dated Aug. 1, 2006, the drawings were objected to as not illustrating the limitations of claims 5 and 6. Claims 1–4, and 7–11 were rejected under 35 U.S.C. 102(b) as being anticipated by Swetish (5,954,253), or in the alternative, under 35 U.S.C. 103(a) as being obvious over Swetish. Claim 4 was rejected under 35 U.S.C. 103(a) as being unpatentable over Swetish in view of Lowe or Wickersham. Claims 5, 6, 11, and 12 were rejected under 35 U.S.C. 103(a) as being unpatentable over Swetish in view of Official Notice taken that it is known in the art to provide a back plate that is curved about the back surface.

1. Amendments to Drawings and Specification

The drawings were objected to as not showing the angles between the back plate upper segment and the back plate lower segment disclosed in claims 5 and 6. FIG. 1 has been amended to reference the angle of claims 5 and 11, clearly shown as between 90 and 180 degrees in the figure. The specification has been amended to provide a character reference referring to this angle in the drawing. Claims 6 and 12 have been cancelled.

A missing space has been supplied in the first line of ¶ 0019.

2. Amendments to claims 1 and 7

Claim 1 has been amended to properly refer to portions of the rigid back plate lower *segment* in the fifth element. In claims 1 and 7, “are” has been changed to *is* when referring to the sliding motion in the last element.

3. Distinguishing over Swetish

To begin with, it should be observed that it is common, as shown in the applied

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references, for a pack arrangement to provide a waist belt linked to the pack sack or frame to transfer some portion of the pack load to the hips of the wearer. Swetish is of this type, using a pin/key hole connection to perform this function. The claimed invention, in contrast, employs the frictional engagement of portions of two rigid plates to transfer such loads, the plates being positioned such that the frictional engagement can be broken at any time by the pulling away of the back plate from the waist plate. This feature is not shown by Swetish or the other applied references.

Swetish discloses a wearable load supporting system having a pack 12 which is mounted to a frame 18, a portion of the load of the pack is transferred to a belt assembly 20 by molded attachment supports 76, 78, which protrude from the belt assembly and extend through key-hole like attachment points 72, 74 on the frame. This structure is perhaps best shown in FIG. 9, and Swetish provides that the “[a]ttachment supports 76 and 78 of assembly 20 are aligned with attachment points 72 and 74, respectively, and snapped into engagement therewith.” (Col. 6, lines 20–23.)

The examiner notes that “with respect to the rigid waist plate being frictionally engaged with the rigid back plate. It is noted that prior to the engagement of portion 80 [support pins] the rigid back plate and the waist plate engaged each other.” (Aug. 1, 2006, action, p. 2, ¶ 2.) As an alternative to this interpretation, the examiner proposes that it would be obvious “to eliminate the attachment means 80 when its function is not desired. See, *Ex parte Rainu*, 168 USPQ 375 (PTO Bd. Of App. 1969). The elimination of the attachment means would allow the back plate and rigid back plate [to] frictionally engage... as claimed.” (Aug. 1, 2006, action, p. 3.) As applicant’s claimed structure utilizes a frictional and instantly releasable structure for the engagement between the back plate and the belt, without any attachment supports which engage in holes, the examiner thus proposes to consider the Swetish reference either (a) at the moment before the frame is connected to the belt; or (b) in the absence of the attachment supports 76 and 78 and

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attachment points 72 and 74, on the grounds that it would be obvious to omit unneeded structure, in analogy to the *Ex parte Rainu* decision. It is respectfully submitted that in neither of these cases does Swetish teach or suggest the claimed invention.

(a) Prior to the engagement of portion 80 the Swetish frame and the waist support belt do not engage each other

To clarify why the Swetish frame and waist support belt do not disclose or teach the frictional engagement of the claimed invention, attention may be drawn to the fact that the Swetish frame 18, on which the examiner reads applicant's "rigid back plate" is in fact not rigid. Swetish states that "Upper and lower portions 44 and 46 [of the frame 18] are preferably both formed as part of a unitary, *flexible* structure made of a deformable plastic material, as described more fully below [emphasis added]." The flexibility of the frame 18 is of some importance to Swetish, who even titles the invention "Flexible frame load carrying system". In the background, Swetish notes a drawback of the prior art to be that "efforts to create an air space for comfortably venting such perspiration have been of limited success. Moreover, rigid pack frames often severely limit the user's freedom of movement, resulting in a somewhat clumsy structure that can be unwieldy...."

Swetish supplies what is wanting in the prior art by flexing the back plate to form a rear air channel:

As best illustrated in FIG. 9, attachment of assembly 20 to frame 18 effectively places an intermediate portion 112 of hip belt assembly 20, located between attachment supports 76 and 78, in mutually facing relation with an intermediate portion 114 of frame 18 located between attachment points 54 and 56. Because the length of intermediate portion 112 is shorter than the length of intermediate portion 114, frame 18 is placed and held in a bowed or arched configuration with a venting or air flow space 116 being created frame 18 and belt assembly 20. This spacing holds pack 12 away from the user's back and facilitates evaporation of

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perspiration from the user's back, further enhancing the comfort of the support system.

(Col. 6, lines 61–63). In other words, the frame is deformed (“bowed”) by its connection to the belt assembly to create the air flow space 116. It would not frictionally engage the belt assembly in a way which would allow any transfer of loads prior to its being connected thereto.

Moreover, Swetish does not teach an arrangement that does not restrict the pulling away of the pack from the belt, as it provides that the support belt 82 is connected to the pack 12 by a strap 94 extending through a ladder lock (as noted at <http://www.seattlefabrics.com/ladder.html> , a ladder lock is a buckle which can be released with one hand). This strap 94 “serves to limit pivotal movement of assembly 20 with respect to frame 18....” Col. 6, lines 38–39.

(b) without the attachment supports and attachment points, the Swetish frame and waist support belt would not engage other

By the same reasoning as set forth above, even using an analogy to the *Ex parte Rainu* decision, there is nothing to suggest frictional load transfer between the flexible frame and the waist support belt absent the disclosed physical connections, because in such a situation the Swetish frame would be too big, and would not clamp the belt assembly between its two wings, and without some load applied, friction will not develop.

Applicant’s claimed invention

The substantial differences between applicant’s claimed invention and the prior art begin with the explicit limitations concerning the interaction between the friction load transfer surfaces of the rigid waist plate and the back plate. Critically, these surfaces are engaged “such that sliding motion between the back plate and the waist plate is restricted by the friction load transfer

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surfaces, without restricting the pulling away of the back plate from the waist plate in a direction generally perpendicular to the engaged friction load transfer surfaces.” As noted in ¶ 0006 of applicant’s specification, “[w]hen conditions call for rapid or limber movements, a backpack which is fixed to the wearer’s waist can be a distressing impediment; and, in the case of military or police use, hazardous.” The Swetish device has a flexible pack frame which is connected to the waist belt assembly by the pin-like attachment supports and keyhole-like attachment points discussed above. The pack is further connected to the belt 82 by the strap 94.

The claim limitations are very specific as to how the friction load transfer surfaces engage, being such as to restrict sliding of the back plate and waist plate, but to not restrict pulling away of these two.

Applicant’s claimed invention has other structural features not shown or suggested by the applied references. First, the claims require frictional engagement between the back plate and the waist plate “such that sliding motion between the back plate and the waist plate is restricted by the friction load transfer surfaces, without restricting the pulling away of the back plate from the waist plate in a direction generally perpendicular to the engaged friction load transfer surfaces.” The claimed back plate is rigid, while the Swetish frame is “flexible” as discussed above. Moreover, the claimed waist plate is rigid, while the Swetish belt is “cut or stamped and molded of a single piece of deformable plastic material” (Col. 5, lines 61–63), shown in FIG. 5 to shaped to a hip pad 84. Moreover, the claimed waist plate is *rearward* of the user’s waist, while the regions which the examiner reads this limitation on in Swetish are located to the sides of the waist. Likewise, the claimed back plate lower segment faces frontwardly where it may engage the rearwardly facing portions of the waist plate.

Because of the clear structural differences between the claimed invention and the applied references, and in light of the significantly different manner of operation of the claimed invention, the applied references cannot be found to teach or suggest the claimed invention.

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4. Other amendments

Claims 4 and 10 have been amended to remove the element "highly mechanical structure material," and new claims 13 and 14 have been added which include that term with clarifying definite limitations as to what "highly" means; as well as additional Markush group elements from the specification. For the reasons discussed above, and further because Swetish does not disclose any such materials to bring about a frictional engagement, amended claims 4 and 10, and new claims 13 and 14 further define over the applied art. Neither Lowe nor Wickersham discloses the use of urethane in a frictionally engaging pack/belt arrangement as claimed.

5. Conclusion

Applicant believes that no new matter has been added by this amendment.

Applicant submits that the claims, as amended, are in condition for allowance. Favorable action thereon is respectfully solicited.

Respectfully submitted,



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November 1, 2006 (3:51pm)